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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LANG, AMY T

ART UNIT PAPER NUMBER

1714

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/797,335	Applicant(s) IWATA ET AL.	
	Examiner Amy T. Lang	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3-10-04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: page 8, lines 18 of the specification includes the phrase "from at least on kind," where it is the examiner's position that "on" should be replaced with "one."

Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 5, 6, 8, 11, 13, and 15-17 of U.S.

Patent No. 6,983,681 B2 (Iwata). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following explanation.

Claim 1 of US '681 discloses a sliding member containing a copper or aluminum based alloy, 1 to 70 vol% of solid lubricant, and 0.1 to 10 vol% of bismuth or bismuth alloy. The solid lubricant is further disclosed as polytetrafluoroethylene, graphite, or molybdenum disulfide. The sliding member is used for a swash plate type piston pump. Additionally, US '681 claims wherein a bonding layer of thermosetting resin is provided on the sliding member.

US '681 does not specifically claim (i) the vol% of the metal alloy or (ii) the thermosetting resin as a polyamidimide, polyimide, or epoxy resin.

With respect to (i) above, US '681 discloses the sliding layer is formed of a base material of copper-based alloy or aluminum-based alloy. Given the evidence in the instant specification that the instantly claimed swash plate also has a base material of copper-based alloy or aluminum-based alloy ([0025]), it therefore would have been obvious for US '681 to also utilize the amount of metal from 30 to 60 vol%. Both US '681 and the instant specification teach a base material so that it would have been obvious to utilize the metal alloy in the same amounts.

With respect to (ii) above, applicants' attention is drawn to MPEP 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of

Art Unit: 1714

whether a claim in an application defines an obvious variation of an invention claimed in the patent. (underlining added by examiner for emphasis) *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

Consistent with the above underlined portion of the MPEP citation, attention is drawn to where US '681 discloses that the preferred embodiments of the thermosetting resin include polyamidimide, polyimide, and epoxy resin (column 1, lines 31-33; column 4, lines 8-9).

4. Claims 1-16 are directed to an invention not patentably distinct from claims 1, 3, 5, 6, 8, 11, 13, and 15-17 of commonly assigned US 6,983,681 B2 (Iwata). Specifically, although the copending claims are not identical, they are not patentably distinct for the reasons set forth in paragraph 7 above.

5. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned US 6,983,681, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were

Art Unit: 1714

commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1-16 rejected under 35 U.S.C. 103(a) as being obvious over Iwata (US 6,983,681 B2).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art

Art Unit: 1714

only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

For explanation of the rejection, see paragraph 3 above.

9. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermann (US 3,839,209) in view of United Lab Equipment, Inc and Wikipedia.

Hermann discloses a composition that provides anti-friction properties to a sliding element, which therefore overlaps the instantly claimed sliding member (column 1, lines 12-17). The composition comprises an epoxy resin, mixtures of bismuth powder and metal (lead) powder, and a solid lubricant (column 1, lines 12-14; column 3, lines 9-11; claim 1, column 11). The metal powder is further disclosed as an alloy comprising copper, which therefore overlaps a copper based alloy (claim 7, column 11). The solid

Art Unit: 1714

lubricant is further disclosed as graphite, molybdenum disulfide, and lead sulfide (claim 8, column 11).

Hermann does not disclose the amounts of each component in vol%.

The mixture of bismuth powder and metal powder, as disclosed by Hermann, is present in the composition from about 5 to 60 wt% (claim 1, column 11). Since density is a standard characteristic, the examiner utilizes a density of 11.34 g/cm^3 for the lead powder and 9.78 g/cm^3 for the bismuth powder (Wikipedia). Furthermore, the remainder of the composition is comprised of an epoxy resin in an amount from 40 to 95 wt% (claim 1, column 11). The density of an epoxy resin is estimated at 1.96 g/cm^3 for the calculation (United Lab Equipment, Inc). Thus, the examiner computed the total volume of each extreme range of bismuth or metal powder and the epoxy resin by using the formula $(\text{wt})=(\text{vol})(\text{density})$. The vol% of bismuth and lead was then found by dividing the range of bismuth or metal with the total volume. The vol% of the lead is found to be between 0.91 and 20.58 vol% and the bismuth between 1.06% and 23.10%. Therefore, although Hermann does not specifically disclose the instantly claimed ranges, Hermann does disclose a mixture of the two in ranges that overlap the instantly claimed so that it would have been obvious to utilize each component within the instantly claimed amounts.

The amount of solid lubricant lead sulfide is utilized in one example in an amount of 7 wt% (Example 4, column). The other components and their density include Resin A (1.96 g/cm^3), Resin B (1.96 g/cm^3), powdered lead (11.34 g/cm^3), Sil Aid (2.33 g/cm^3 which is the density of silicon), and aluminum phosphate (2.566 g/cm^3) (Wikipedia and

Art Unit: 1714

United Lab Equipment, Inc). As explained above, the volume of each component was calculated using the formula $(wt)=(vol)(density)$ and then the total volume was added. The vol% of lead sulfide was calculated as the vol of lead divided by the total volume, which was found equal to 2.3 vol%. Therefore, the amount of solid lubricant lead sulfide clearly overlaps the instant range of 1 to 30 vol%. Since Hermann discloses that either lead sulfide, graphite, or molybdenum disulfide can be used in the invention as the solid lubricant, it would have been obvious to replace lead sulfide with graphite or molybdenum disulfide and utilize them in the same amount.

Since Hermann discloses the metal powder, bismuth powder, and solid lubricant within the instantly claimed ranges, the sum of these three components would not exceed 70 vol%.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy T. Lang whose telephone number is 571-272-9057. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

Art Unit: 1714

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

9/6/06

ATL

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